Japanese Journal of Ichthyology
Vol. XIV, nos. 1/3
August 20, 1966

魚類学雑誌
第14巻 第1/3号
1966年8月20日発行

Some Salient Features in the Cranial Nerves of Certain Teleostean Fishes

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The contributions from this country on the cranial nerves of teleostean fishes are of KARANDIKAR & THAKUR (1951), MARATHE (1955), SINHA (1964), MITTEL (1964) and MAHESHWARI (1965), though their knowledge in Indian bony fishes is very much in demand from students specializing in ichthyology. The present attempt describes only the salient features in the cranial nerves of *Clarias batrachus* (LINN.), *Amphipnous cuchia* (HAM.), *Notopterus notopterus* (PALLAS.), *Cirrhina mriqala* (HAM.), *Hilsa ilisha* (HAM.), *Nandus nandus* (HAM.) *Xenentodon cancila* (HAM.) and *Cynoglossus bilineatus* (LAC.) included for the study. The cranial nerves are identically disposed on either side except in *Cynoglossus*. The nervus olfactorius is small in *Clarias*, *Notopterus* and *Cirrhina* and long in *Amphipnous*, *Hilsa*, *Xenentodon* and *Nandus*, while thin on right side and thick on left side with a cup-shaped structure at the distal end in *Cynoglossus*. The nervus opticus forms the optic chiasma with the same of other size under the cerebrum, except in *Amphipnous*, where it lies under the olfactory lobes. The nervus opticus nerve of right side curves over the nervus olfactorius after decussation to reach on left side in *Cynoglossus*. The nevri trigeminalis and facialis by their fusion form the trigeminofacial complex in all except in *Notopterus*, where occurs only the connecting branches and some intermingling of fibres between them. The complex separates into the supraorbital and infraorbital trunks extracranially after giving off the hyomandibular trunk intracranially in *Clarias*, while all the three trunks arise intracranially in the rest. The supraorbital trunk separates into the rami opthalmicus superficialis trigeminus and opthalmicus superficialis facialis near the olfactory resette in *Clarias* and *Amphipnous*, in the middle in *Hilsa* and *Xenentodon* and immediately after the origin in *Cirrhina*. The two rami arise separately in *Notopterus*, while the trunk remains undivided except giving off small branches in *Nandus* and large branches being arranged in a fan-like manner in *Cynoglossus*. The infraorbital trunk splits into the ramus buccalis and maxillomandibularis trigeminus trunk in *Clarias*, *Cirrhina*, *Xenentodon* and *Cynoglossus* and into the buccalo-maxillaris trunk and ramus mandibularis trigeminus in the rest. Anastomoses exist between rami maxillaris and buccalis in *Clarias*, *Amphipnous*, *Xenentodon* and *Cirrhina*, between rami maxillaris and mandibularis trigeminus in *Amphipnous*, *Notopterus* and *Cirrhina* and between the maxillo-mandibularis trigeminus

trunk and ramus buccalis in *Xenentodon*. The hyomandibular trunk separates from the complex in *Clarias* and from the nervus fascialis in the remaining forms. It is connected with the complex through a communicating branch in *Amphipnous, Cirrhina, Xenentodon, Hilsa* and *Nandus*. The hyomandibular trunk separates the opercularis branch before splitting into the rami mandibularis facialis and hyoideus. The trunk maintains anastomosis with maxillomandibularis trigeminus trunk in *Notopterus*, while the ramus mandibularis facialis joins the mandibularis trigeminus in *Hilsa*, but only anastomoses with it in *Xenentodon*. The ramus hyoideus also gives off the opercular branch in *Cynoglossus*. Both anterior and posterior palatinus rami are present in *Clarias* and *Xenentodon*, but only anterior in *Notopterus* and *Hilsa* and only posterior in *Amphipnous, Cirrhina, Nandus* and *Cynoglossus*. The palatinus branch also shows anastomosis with ramus baccalis in *Cirrhina*. The ramus lateralis accessorius has been observed in *Clarias, Amphipnous* and *Xenentodon* only. The nervus acousticus maintains anastomoses with hyomandibular trunk in *Amphipnous* and between its two parts in *Notopterus* as well. The nervus glossopharyngeus remains independent through out but fuses with nervus vagi for a short distance in *Hilsa*, while besides the pretrematic branch it also gives off a pharyngeal branch in *Notopterus* and *Xenentodon* and it even fuses with the ramus mandibularis facialis in *Nandus*. It anastomoses with hyomandibular trunk in *Amphipnous* and *Nandus*, with nervus acousticus and nervus vagi in *Amphipnous* and with first spinalis in *Cirrhina*. The nervus vagi arises by a pair of roots of which the anterior and posterior roots are formed of three to four rootlets in *Cirrhina* and *Notopterus* respectively. The posterior root of nervus vagi forms anastomosis with ramus lateralis accessorius in *Amphipnous*. The vagal mass of nervus vagi gives off the ramus supratemporalis branch in *Notopterus, Cirrhina* and *Cynoglossus* and an opercular branch in *Notopterus, Cirrhina, Nandus, Hilsa* and *Cynoglossus*. The supratemporalis branch later on splits into the rami lateralis superficialis vagi and lateralis recurrens vagi in *Cynoglossus*, while the opercular branch anastomoses with the same of hyomandibular trunk in *Notopterus, Hilsa* and *Cynoglossus*. The fourth branchialis shows anastomosis with the visceralis branch in *Cirrhina*. The posttrematic branch shows connection with the pretrematic branch in *Hilsa* and *Nandus* and with the branchialis proper in *Cirrhina*. Besides the usual visceralis, a visceralis accessorius occurs in *Amphipnous* and *Nandus*.

The author is thankful to Dr. B.M. SINHA for supervision.

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